AMENDMENTS TO THE CLAIMS

1-36. (Canceled)

37. (Currently Amended) An impurity doping method for semiconductor having a crystal layer, the method comprising:

supplying a first crystal raw material to form a first layer;

after the step of supplying a first crystal raw material stops, supplying a second crystal raw material different from the first crystal raw material to form a second layer on the first layer;

supplying at least one p-type impurity raw material and at least one n-type impurity raw material before the step of supplying the second crystal raw material, thereby doping an impurity pair of the at least one p-type impurity raw material and the at least one n-type impurity raw material into only the first layer,

wherein a kind of impurity pairs composed of the p-type impurity raw material and the n-type impurity raw material are formed in the first layer.

38. (Previously Presented) The impurity doping method for semiconductor according to claim 37, wherein the step of supplying the at least one p-type impurity raw material and the at least one n-type impurity raw material includes:

supplying one of the at least one p-type impurity raw material and the at least one n-type impurity raw material; and

after the step of supplying one of the at least one p-type impurity raw material and the at least one n-type impurity raw material, supplying the other one of the at least one p-type impurity raw material and the at least one n-type impurity raw material.

39. (Currently Amended) The impurity doping method for semiconductor according to claim 37, wherein the step of supplying the at least one p-type impurity raw material and the at least one n-type impurity raw material includes:

supplying the at least one p-type impurity raw material and the at least one n-type impurity raw material simultaneously[[:]].

40. (Previously Presented) The impurity doping method for semiconductor according to claim 37, wherein the step of supplying the at least one p-type impurity raw material and the at least one n-type impurity raw material includes:

supplying the at least one p-type impurity raw material and the at least one n-type impurity raw material after starting supplying a first crystal raw material.

41. (Previously Presented) The impurity doping method for semiconductor according to claim 37, wherein the step of supplying the at least one p-type impurity raw material and the at least one n-type impurity raw material includes:

supplying the at least one p-type impurity raw material and the at least one n-type impurity raw material simultaneously at least for a predetermined period of time.

42. (Previously Presented) The impurity doping method for semiconductor according to one of claims 37 to 41 and 43, wherein:

the first crystal raw material is at least one member selected from the group consisting of Ga, Al, In, B, Zn, and Cd, and the second crystal raw material is at least one member selected from the group consisting of N, As, P, S, Se, and Te.

43. (Previously Presented) The impurity doping method for semiconductor according to claim 37, wherein the step of supplying the at least one p-type impurity raw material and the at least one n-type impurity raw material includes:

supplying the at least one p-type impurity raw material and the at least one n-type impurity raw material at the same time of starting supplying a first crystal raw material.

44. (Currently Amended) The impurity doping method for semiconductor according to claim 37, wherein the first crystal raw material is TMGa, the second crystal raw material is NH3, the at least one p-type impurity raw material is (Cp)2Mg, and the at least one n-type impurity raw material is TESi, and wherein a combination of the steps in claim 37 includes:

(a) supplying TMGa and (Cp)2Mg at a first timing, and forming a Ga layer as the first layer;[[,]]

(b) finishing the supply of TMGa and (Cp)2Mg at a second timing at which the supply of TMGa and (Cp)2Mg for a predetermined period of time was completed;

(c) supplying TESi either immediately after, or after the second timing at with the supply of TMGa and (Cp)2Mg was finished, and forming impurity pairs Mg-Si in said Ga layer;[[.]]

(d) finishing the supply of TESi at a third timing at which the supply of TESi for a predetermined period of time was completed;

(e) supplying NH3 either immediately after, or after the third timing at which the supply of TESi is finished, and forming an N layer as a second layer on said Ga layer;[[,]]

(f) finishing the supply of NH3 at a fourth timing at which the supply of NH3 for a predetermined period of time was completed;

(g) starting a predetermined purge time after the supply of NH3 at the fourth timing at which the supply of NH3 was completed;[[,]]

(h) finishing said predetermined purge time at a fifth timing; and

(i) repeating the steps of (a)-(h) a desired number of times.

45-48. (Canceled)